Soviet Physics Journal 1981 vol.24 N5, pages 383-388

Bianchi type I anisotropic cosmological model with a collisionless gas

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Abstract

The self-consistent system of Einstein-Vlasov equations is investigated in a class of homogeneous spaces. The Bianchi Type I anisotropic cosmological model with orthogonal Killing vectors is considered in detail. It is shown that the energymomentum tensor of a collisionless gas is spatially anisotropic. Exact solutions of the Einstein-Vlasov equations are found in the case of strong anisotropy. The behavior of small perturbations is investigated for a mixture of an ideal fluid and a collisionless gas as well as for a nonrelativistic collisionless gas. © 1981 Plenum Publishing Corporation.

http://dx.doi.org/10.1007/BF00898394